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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 09/931,021   | 08/17/2001  | Chang Ryul Lee       | 2669-0112P          | 2749             |
| 2292   | 7590        | 03/23/2005           | EXAMINER            |                  |
| BIRCH STEWART KOLASCH & BIRCH<br>PO BOX 747<br>FALLS CHURCH, VA 22040-0747 |             |                      | XIAO, KE            |                  |
|  |             | ART UNIT             | PAPER NUMBER        |                  |
|  |             | 2675                 |                     |                  |

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                 |                 |
|------------------------------|-----------------|-----------------|
| <b>Office Action Summary</b> | Application No. | Applicant(s)    |
|                              | 09/931,021      | LEE, CHANG RYUL |
|                              | Examiner        | Art Unit        |
|                              | Ke Xiao         | 2675            |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 28 November 2001.  
 2a) This action is FINAL.                            2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-9 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1 and 4 is/are rejected.  
 7) Claim(s) 2,3,5 and 6 is/are objected to.  
 8) Claim(s) 7-9 are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 28 November 2001 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.  
 5) Notice of Informal Patent Application (PTO-152)  
 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-6, drawn to a multi-directional ball and the details thereof, classified in class 345, subclass 163.
- II. Claim 7, drawn to the method of using a multi-directional ball switch for the purposes of navigating a map search on the Internet, classified in class 345, subclass 619.
- III. Claim 8, drawn to a method of using a multi-directional ball switch for the purposes of navigating a web-search in a windows environment, classified in class 345, subclass 649.
- IV. Claim 9, drawn to a method of using a multi-directional ball switch for the purposes of character selection, classified in class 345, subclass 59.

The inventions are distinct, each from the other because of the following reasons:

Inventions I, II, III and IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable.

In the instant case, invention I has separate elements which include the details of the multi-directional mouse that is not claimed in groups II-IV and can be used in a manner that is different from the ones claimed in groups II-IV. See MPEP § 806.05(d).

In the instant case, invention II has separate utility such as designation of a portion of a map, which is in turn enlarged or contracted this is unrelated to groups I, III, or IV. See MPEP § 806.05(d).

In the instant case, invention III has separate utilities such as changing web windows and prescribed positioning of a cursor, which are both unrelated to groups I, II, or IV. See MPEP § 806.05(d).

In the instant case, invention IV has separate utility such as character selection, which is unrelated to groups I, II, or III. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Joseph A. Kolasch on Feb 15<sup>th</sup> 2005 a provisional election was made with traverse to prosecute the invention of group I, claims 1-6. Affirmation of this election must be made by applicant in replying to this Office action. Claims 7-9 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kwok (US 5,280,276) in view of Gilbert (US 5,463,409) and Vaghefi (US 6,429,851).

Kwok teaches a multi-directional ball switch comprising a panel having four diagonally located fixtures each of which has an orthogonal shaft-hole (Fig. 7 elements 7, 14 and 18), a ball knob places on said panel (Fig. 5 element 32), a conversion means that transforms the rotation of the ball knob into an electric signal (Col. 4 lines 1-5), a computer, which inherently has a CPU that is connected to the conversion means (Col. 4 lines 27-49), and a signal generation section connected to the CPU (Col. 4 lines 27-49). Kwok does not teach that the CPU is connected to a sound generation section, nor does he teach a switching section that restrains the rotation of the ball knob and generates an output value from the CPU. Gilbert teaches a switching section that makes physical contact with a track ball, which generates an output value when it is pressed, and since there is physical contact the switch inherently restrains the movement of the ball (Fig. 2, Col. 2 lines 50-56, Col. 3 lines 26-36). It would have been obvious to one of ordinary skill in the art to add the switching element as taught by Gilbert in the track ball system disclosed by Kwok because it would provide improved and simple clicking

functionally (Col.1 lines 50-55). Vaghefi teaches a trackball system with a sound-generating portion included there in (Fig. 17, Col. 4 lines 19-39). It would have been obvious to one of ordinary skill in the art to attach a sound generation device to a computer as disclosed by Vaghefi in the trackball system as disclosed by Kwok because it would add an additional form of feedback to the user.

Regarding claim 4 Gilbert teaches a switching section that includes a supporting plate having a hinge hole (Fig. 2 element 21), a hinge shaft that is inserted into the hinge hole (Fig. 2 element 22), a stopper that is equipped with a supporting ball (Fig. 2 element 6), and a press sensor that is installed on the support plate (Fig. 2 element 25 and 26). Gilbert does not disclose that the supporting ball is located at the center of the supporting plate nor does he disclose that the press sensor is installed between the top of the supporting plate and the down surface of a panel. At the time the invention was made it would have been an obvious matter of design choice to a person of ordinary skill in the art to modify the switch as taught by Gilbert in order to have the supporting ball located in the center of the plate and to have a the press sensor located between the top of the supporting plate and the down surface of the panel as claimed because the applicant has not disclosed that the above limitations provide an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expect the applicant's invention to perform equally well with the switch as taught by Gilbert because they both allow the user to press down on the ball knob in order to actuate a switch as disclosed in the specification.

***Allowable Subject Matter***

Claims 2-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is an examiner's statement of reasons for allowance:

Regarding claim 2, prior art (Bruneau US 6,707,443) teaches that haptic feedback or click encoders are known in the art, however it is unconventional to locate and assemble the encoders in a manner as claimed.

Regarding claim 3, prior art (Vaghefi US 6,429,851) teaches the generation of sound according to different shapes applied to the mouse or the pressing of buttons, however prior art does not teach the generation of different characteristic sounds according to the directions of movement of the ball knob as claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ke Xiao whose telephone number is (703) 305-5584. The examiner can normally be reached on Monday through Friday from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (703) 306-0403. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

March 7<sup>th</sup>, 2005 - kx -

*Sumati Lefkowitz*  
SUMATI LEFKOWITZ  
PRIMARY EXAMINER